

REMARKS

Claims 1-16 (original) and 17-18 (new) are currently pending in this application. In the Office Action mailed January 29, 2002 (the "Office Action"), claims 1-3 were rejected, claims 4-10 were deemed allowable but objected to as being dependent upon a rejected base claim, and claims 11-16 were deemed allowable. Claims 1-3 have been amended to overcome the rejections set forth in Paragraphs 2-6 of the Office Action. Claims 4-10 have been amended to overcome the objection set forth in Paragraph 8 of the Office Action. New claims 17-18 have also been added, each having a proper basis in the specification such that no new matter has been entered. Applicants respectfully request favorable consideration of the present application in light of the amendments to the claims and specification and the following remarks.

I. Specification

The specification was objected to in Paragraph 1 of the Office Action due to certain informalities on Page 4 of the specification. The specification has been amended to correct these informalities such that the objection is believed to be moot, with the specification in proper form.

II. Claims

A. 35 USC 102(b) - Cesarini et al. / 35 USC 102(e) - Trott

Claim 1 was rejected in Paragraphs 3 and 4 of the Office Action as being respectively anticipated by U.S. Pat. No. 5,833,692 to Cesarini et al ("Cesarini") and U.S. Pat. No. 4,646,738 to Trott ("Trott"). Applicants respectfully traverse these rejections as follows.

In order to reject a claim for anticipation, it must be shown that each and every element of the claim can be found in a single reference. In order to avoid rejection for anticipation, an applicant need only show that the claim contains at least one element not disclosed in the cited reference.

Claim 1, as amended, recites a bone graft harvesting drill comprising a generally cylindrical drill bit coupled to a distal end of a flexible tubular member. The generally cylindrical drill bit has a distal opening for receiving bone therein during use, and an outer distal periphery dimensioned to deflect off cortical bone during use. The flexible tubular member is capable of bending to follow the drill bit as the drill bit deflects off cortical bone during use.

Neither the Cesarini nor Trott references appear to disclose each and every element of claim 1. More specifically, these references fail to disclose (among other things) the claimed feature of providing a "*cylindrical drill bit having...an outer distal periphery dimensioned to deflect off cortical bone during use.*"

*inner
tapered
surfaces*

This distinction is significant in that the invention recited in Claim 1 is capable of traversing through the interior of a bony structure without inadvertently penetrating the cortical bone portion, which constitutes the harder outer shell that surrounds or encompasses the softer cancellous bone. This is accomplished by dimensioning the drill bit of the present invention such that it deflects off the cortical bone during use. In one embodiment, by way of example

only, this may be useful in preventing inadvertent penetration of the cortical bone while harvesting cancellous bone from the iliac crest.

Because the Cesarini and Trott references each appear silent with regard to at least one element of amended Claim 1, it is respectfully requested that the rejections in Paragraphs 3 and 4 of the Office Action be withdrawn. Claim 1 is believed to be in proper condition for allowance and an indication of such is hereby respectfully requested.

Claim 3, being dependent upon and further limiting independent Claim 1, should be allowable for the reasons set forth in support of the allowability of Claim 1.

B. 35 USC 103(a) – Cesarini et al. in view of Durgin et al.

Claim 2 was rejected in Paragraph 5 of the Office Action as being unpatentable over Cesarini in view of U.S. Pat. No. 6,030,364 to Durgin et al. (“Durgin”). Applicants respectfully traverse this rejection as follows.

Claim 2 depends from amended Claim 1 and recites that the flexible tubular member is made from semi-rigid thermoplastic. As explained above, the Cesarini reference appears absolutely silent with respect to the claimed feature of providing a “*cylindrical drill bit having...an outer distal periphery dimensioned to deflect off cortical bone during use.*” While Durgin may call out the use of a tubular element made from semi-rigid thermoplastic, it nonetheless fails to make up for the void in the teachings of the Cesarini reference with respect to the claimed feature of providing a “*cylindrical drill bit having...an outer distal periphery*

dimensioned to deflect off cortical bone during use." With both references failing in this regard, there would be no reason why one skilled in the art would be led to the present invention as presently claimed.

Based on the foregoing, it is respectfully requested that the rejection in Paragraph 5 of the Office Action be withdrawn. Claim 2 is believed to be in proper condition for allowance and an indication of such is hereby respectfully requested.

C. Allowable Subject Matter

Applicants acknowledge with appreciation the indication of allowability of claims 11-16 set forth in Paragraph 7 of the Office Action, as well as the indication in Paragraph 8 that claims 4-10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In response to Paragraph 8, Applicants have amended claim 4 to incorporate all of the limitations of original claim 1, and amended claims 5 and 7 to depend upon the now independent claim 4. Claims 4-10 are now believed to be in proper form for allowance and an indication of such is hereby respectfully requested.

D. New Claims

Claim 17, newly presented, recites a bone drill. The bone drill includes a generally cylindrical drill bit having a beveled outer distal periphery dimensioned such that, in use, the drill bit deflects off cortical bone and thereby avoids penetrating the cortical bone.

Claim 18, newly presented, recites a method of drilling bone, comprising the steps of: (a) providing a generally cylindrical drill bit having a beveled outer distal periphery; (b) inserting the generally cylindrical drill bit through an aperture formed in a patient's cortical bone; and (c) rotating the generally cylindrical drill bit such that, when advanced through the aperture, the drill bit deflects off an inner wall of the cortical bone and thereby avoids penetrating the cortical bone other than through the aperture.

Neither the Cesarini, Trott, or Durgin references, nor the other references of record, appear to include any teaching or suggestion that would anticipate or (alone or in combination) render obvious the apparatus and method set forth in newly presented claims 17-18. No new matter has been entered through claims 17-18.

Applicant respectfully submits that claims 17-18 are believed to be in proper condition for allowance and an indication of such is hereby respectfully requested.

CONCLUSION

Reconsideration and allowance of the claims in this application is respectfully requested.

In the event that there are any questions concerning the remarks above or the application in general, the Examiner is cordially invited to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,
NUVASIVE, INC.

By: 
Jonathan Spangler, Esq.
Registration No. 40,182

10065 Old Grove Road
San Diego, CA 92131
Tel.: (858) 243-0029

July 29, 2002